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ABSTRACT

A rural Ohio elementary school monitored the relationship of its restructuring efforts to students' reading achievement and self-perceived motivation to learn. Restructuring efforts involved multiage grouping, cooperative structures, community groups, full inclusion of children with mild learning handicaps, integrated curricula with thematic units, individualized and whole language-based reading, and authentic assessment. Students from the target school (n=142) and students from a comparison rural school (n=144) in grades 1-4 were assessed in fall 1992 and reassessed with the same instruments in spring 1993. Instruments used were the reading comprehension section of the Stanford Achievement Test, Harter's Pictorial Scale of Perceived Competence and Social Acceptance for Young Children and Self-Perception for Children. In addition, fourth graders took the Quality of School Life Scale. Controlling for income, there were no significant differences in reading comprehension scores in the fall, but there were significant differences in the spring favoring the target school. Overall, females showed greater achievement gains and achieved at a significantly higher level than males. On the Harter Scales, first graders reported greater gains in feelings of social acceptance than did second graders. There were no differences between schools on the Harter scales. Females in the fourth grade reported more positive attitudes toward school than did fourth-grade males. (KS)

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# Restructuring for Student Success in a Rural School: Preliminary Analyses

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## Abstract

This study examined a rural elementary school's restructuring efforts and its relationship to reading achievement and self-perceptions related to motivation to learn. One hundred and forty-two students in first through fourth grade in the target school (72 males, 70 females) and 144 students (73 males, 71 females) in grades one through four from a comparison rural school were assessed in the fall of 1992 and then reassessed with the same instruments in the spring of 1993. Students were administered the reading comprehension section of the Stanford Achievement Test, Harter's Pictorial Scale of Perceived Competence and Social Acceptance for Young Children and Self-Perception for Children, and Epstein and McPartland's The Quality of School Life Scale. Controlling for income, significant differences were found between the schools on reading comprehension growth. Overall, females showed greater achievement gains and achieved at a significantly higher level than males. On the Harter, first graders reported greater gains in feelings of social acceptance than second graders. Females in the fourth grade reported greater levels of positive attitude toward school than fourth grade males. Preliminary analyses are supportive of the target school's restructuring efforts.

## Restructuring for Student Success in a Rural School: Preliminary Analyses

A myriad of studies exists on the inadequacy of American education. Despite an equally vast number of attempts to improve education, the perception remains that American education is mediocre and unresponsive to the needs of our society. Although many schools are restructuring to improve the education of their students, systematic description and empirical study of these efforts are often neglected. Schools routinely embrace change solely on the basis of political and philosophical persuasion, but few metrics to assess improvements in student outcomes are included in the change processes. The consequences of such neglect are noted in the literature (e.g., Carson, Huelskamp, & Woodall, 1993; Guiterrez & Slavin, 1992; Levine & Lezotte, 1990). The following is a brief description of one rural school's efforts to undertake change and a preliminary analysis of the consequences of those changes.

Over the past five years, the target rural school has incorporated the following developmentally appropriate practices: (1) multiage grouping, (2) cooperative structures, (3) community groups, (4) full inclusion of children with mild learning handicaps, (5) integrated curricula with thematic units, (6) individualized and whole language-based reading, and (7) authentic assessment, including continuous progress monitoring. To determine the extent these efforts are benefitting students a comparison school was selected to test the following hypotheses. Significant differences were predicted between the two schools on the basis of reading comprehension growth and various self-perceptions underlying

motivation to learn. Little to no differences were predicted between the schools at the outset of the school year. Differences in achievement and self-perceptions were predicted to increase in magnitude as students progress through the grades.

## Method

### Schools

Two rural elementary schools in Eastern Ohio were the focus of this study. The target school, located in East Central Ohio, houses grades kindergarten through four and has a student population of 193. In a 1992 state-wide comparison of school districts the target school fell within a cachement area with high agricultural dependence, average median federal adjusted income (1990), below average percent ADC, and low commercial valuation. The target school uses a variety of developmentally appropriate practices. Retention is not practiced and placement into high incidence special education classes has not occurred for the past three years.

The comparison school, located in Southeastern Ohio, houses grades kindergarten through sixth with a population of 284 students. In 1992 the comparison school fell within a cachement area with high agricultural dependence, low median federal adjusted income (1990), high percent ADC, and low commercial valuation. This school follows a traditional model of grade-based, self-contained classrooms with subjects taught in isolation. Retention and high incidence special education placements are routine.

Given the differences in cachement areas, a chi-square analysis of income differences, operationalized by free and reduced lunch

status, was conducted. Significant income differences were found between the schools, $\chi^2(2, N = 286) = 16.86$, $p < .001$. Approximately eighty percent of the students attending the target school received no reduction (80.3%), fourteen percent received free lunches (14.1%), and six percent paid reduced lunch prices (5.6%). In contrast, fifty eight percent of the students at the comparison school received no reduction (58.3%), thirty three percent received free lunch, and eight percent paid reduced lunch prices (8.1%).

Subjects

The total sample for the present investigation consisted of 286 elementary students enrolled in first through fourth grades. Data were collected on 142 students (72 males and 70 females) from the target school and 144 students (73 males and 71 females) from the comparison school. A passive approach was used for parent permission for student participation. Only one parent denied permission. In addition, only students who participated in both fall and spring testings were used for analysis, which resulted in small variations in sample sizes.

Measures

Outcome measures selected for this study were the reading comprehension section of the Stanford Achievement Test (SAT, 1989), the Harter Scales (Harter & Pike, 1983; Harter, 1985), and Epstein and McPartland's (1978) The Quality of School Life Scale. Because of the expense and time involved with assessing a relatively large number of students, it was decided to limit academic assessment in the first year of this study to reading comprehension.

The Harter Scales were designed to measure a student's sense of competence and acceptance by others. They include the following scales. The Pictorial Scale of Perceived Competence and Social Acceptance for Young Children (Harter & Pike, 1983) was designed to be a domain-specific downward extension of an original measure which is appropriate for students in grades one and two. The Self-Perception Profile for Children (Harter, 1985) is a revision of the original measure and can be administered to students in grades three and four.

The Quality of School Life Scale is a multidimensional measure of students' reactions to school in general, to their class work, and to their teachers, and is appropriate for students in grades four through twelve. Reading comprehension was measured by a subtest of the Eighth Edition of the Stanford Achievement Test (1989), a psychometrically sound group administered test.

Procedures

Students in grades one through four in both schools were assessed in early fall, 1992. For grades one through four, students were tested on the SAT and on the Harter scales. Only students in grade four were tested on The Quality of School Life Scale. The students were administered these instruments a second time in the spring of 1993. In addition, data were collected on each student's gender, chronological age, grade placement, race, socioeconomic status, attendance, transiency, retention status, and participation in Chapter 1 programs. All testing was conducted by college students trained in the administration of each measure under the supervision of a certified school psychologist and school psychology intern.

## Results

The principle analysis consisted of a 2 (school) X 4 (grade) X 2 (sex) repeated ANOVA. Dependent measures consisted of students' fall and spring performances on the SAT, respective Harter scales and The Quality of School Life Scale. On the basis of reading achievement significant main effects were found for school ( $F$ (1, 270) = 5.73, $p < .01$), grade ($F$ (3, 270) = 3.71, $p < .01$), and sex ( $F$ (1, 270) = 13.95, $p < .001$). Significant interactions were found for grade and sex ($F$ (3, 270) = 4.16, $p < .01$). When controlling for income, no significant differences were found between the schools in the fall. However, by spring significant reading achievement differences were found, favoring the target school, $F$ (1, 284) = 4.05, $p < .05$. Males in the target school and females from both schools outperformed males in the comparison school on the fall and spring SAT testing. Females from the comparison school did as well as the males and females from the target school on the SAT. Females and males from the target school performed similarly in the fall, but by the spring females scored significantly higher on the SAT, $F$ (1,141) = 4.05, $p < .05$.

For grades 1 and 2, no significant differences were found on the Harter scales measuring competence. First graders reported greater gains in levels of social acceptance than second graders, $F$ (1, 141) = 6.28, $p < .01$. No significant differences were found on the Harter scales in grades 3 and 4. Males showed a decrease from fall to spring on The Quality of School Life Scales, $F$ (1, 57) = 10.12,

$p < .01$. When the data were examined separately in the fall and spring, it was found that females as a group had higher mean ratings. This suggests that females in this study find school a more positive place than males.

Respective means and standard deviations of the measures used in this study are reported in Tables 1 through 4.

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Insert Tables 1-4 About Here

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## Conclusion

Preliminary analyses indicated a difference in the respective schools on the basis of reading achievement. Students in the school undergoing restructuring achieved a mean fall NCE score of 50.57 on the comprehension section of the Stanford Achievement Test. The comparison school earned a mean NCE score of 45.65. By the spring the restructuring school earned a mean NCE of 52.96, whereas the comparison school achieved a mean NCE score of 46.81. When controlling for student income no significant difference was found between the schools in the fall. However, by the spring the target school significantly outperformed the comparison school.

Overall, females (fall M NCE = 50.87; spring M NCE= 54.52) significantly outperformed males (fall M NCE = 45.39; spring M NCE = 45.33) on the SAT. In addition, as measured by the Quality of School Life Scale, fourth grade females reported greater positive attitudes and behaviors toward school (fall M = 22.75; spring M = 22.71) than males (fall M = 18.73; spring M = 17.18). No overall differences were

found between schools on the basis of students' self-reports on the Harter scales.

The target school's efforts appear to have positively impacted the reading achievement of its students. The effect on students' perceived competence and acceptance is less clear. Three explanations are suggested. Despite differences in school philosophy, curriculum, and instructional approaches, students in both schools may genuinely perceive themselves similarly in terms of competence and acceptance because of a frame of reference effect (Strein, 1993). It is also possible that administration of the self-report measures elicited a Hawthorne effect. As well, it may be that the self-report measures used in this study do not discriminate well, and are insensitive to differences in group achievement levels.

Additional analyses and study are needed. Efforts are underway to analyze information related to grade retention and high incidence placement rates between the schools. The target school no longer retains students in grade and has not placed any students in high incidence special education classes for the past three years. The comparison school uses retention and special education pull-out services. This is likely to inflate the comparison school's achievement levels. Data are also being analyzed related to Chapter I and Reading Recovery services.

Plans are underway to continue this study through the 1995-96 school year. This will permit the longitudinal following of the 1992-93 first grade cohort through their fourth grade year, the exit year from the target school. While continuing to document achievement performances additional instruments and means to

assess motivational characteristics will be explored. Such a time frame will provide a wealth of quantitative and descriptive data. Restructuring efforts are typically demanding on staff and resources, and require a long-term commitment. Outcome data are vital in determining the effectiveness of restructuring efforts for the school undergoing change, as well as determining the appropriateness of recommending that other schools follow a similar course of action.

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Table 1

**Means and Standard Deviations of SAT Reading Comprehension - Total Sample**

**Grades 1 - 4**

| | | n | SAT |
|---|---|---|---|
| Target School | Fall | 142 | 50.57 (21.63) |
| | Spring | 142 | 52.96 (19.91) |
| Comparison School | Fall | 144 | 45.65 (16.50) |
| | Spring | 144 | 46.81 (18.36) |

Note. Standard deviation is in parenthesis.

**Table 2**
**Means and Standard Deviations of Harter Scales**

**Grades 1 and 2**

| | | n | Cognitive | Physical | Peer | Maternal | Competence | Social Acceptance |
|---|---|---|---|---|---|---|---|---|
| Target School | Fall | 68 | 3.38 (0.45) | 3.43 (0.44) | 3.13 (0.67) | 2.83 (0.53) | 3.40 (0.37) | 2.98 (0.54) |
| | Spring | 68 | 3.55 (0.38) | 3.59 (0.36) | 3.13 (0.60) | 2.77 (0.58) | 3.57 (0.30) | 2.95 (0.49) |
| Comparison School | Fall | 81 | 3.44 (0.51) | 3.57 (0.38) | 3.30 (0.61) | 2.89 (0.69) | 3.51 (0.40) | 3.08 (0.58) |
| | Spring | 81 | 3.49 (0.44) | 3.57 (0.38) | 3.23 (0.62) | 2.80 (0.67) | 3.53 (0.35) | 3.01 (0.58) |

Note. Standard deviation is in parenthesis.

**Table 3**
**Means and Standard Deviations of Harter Scales**

**Grades 3 and 4**

| | | n | Scholastic | Social | Athletic | Physical Appearance | Behavioral Conduct | Global Self |
|---|---|---|---|---|---|---|---|---|
| Target School | Fall | 66 | 2.98 (0.61) | 2.89 (0.66) | 2.85 (0.64) | 2.99 (0.74) | 3.14 (0.68) | 3.23 (0.67) |
| | Spring | 66 | 2.98 (0.64) | 3.09 (0.67) | 2.99 (0.66) | 2.93 (0.75) | 2.95 (0.71) | 3.28 (0.64) |
| Comparison School | Fall | 59 | 2.88 (0.53) | 2.85 (0.67) | 2.64 (0.74) | 2.96 (0.68) | 3.07 (0.60) | 3.08 (0.60) |
| | Spring | 59 | 3.02 (0.66) | 2.90 (0.88) | 2.87 (0.79) | 3.18 (0.78) | 3.19 (0.70) | 3.31 (0.75) |

Note. Standard deviation is in parenthesis.

**Table 4**

**Means and Standard Deviations of Epstein's Quality of School Life**

**Grade 4**

| | | n | Satisfaction | Commitment | Teachers | TOTAL |
|---|---|---|---|---|---|---|
| Target School | Fall | 36 | 3.53 (1.78) | 8.64 (2.50) | 9.03 (2.06) | 21.19 (5.95) |
| | Spring | 36 | 3.53 (1.65) | 7.94 (3.35) | 7.72 (2.99) | 19.19 (7.25) |
| Comparison School | Fall | 25 | 3.64 (1.80) | 8.36 (2.33) | 7.68 (2.55) | 19.68 (6.05) |
| | Spring | 25 | 3.60 (1.76) | 8.76 (2.80) | 8.12 (2.64) | 20.48 (6.67) |

Note. Standard deviation is in parenthesis.